NOAA FISHERIES SERVICE

Southeast Region

Habitat Conservation Division

https://www.fisheries.noaa.gov/region/southeast#habitat

Essential Fish Habitat – U.S. Caribbean

Fish require healthy surroundings to survive and reproduce. Essential fish habitat includes all types of aquatic habitat - wetlands, coral reefs, seagrasses, mangroves - where fish spawn, breed, feed, or grow to maturity.

This document has been prepared by the Habitat Conservation Division of NOAA's National Marine Fisheries Service (NMFS) Southeast Regional Office to provide an overview of the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act in the U.S. Caribbean.

NMFS and the Caribbean Fishery Management Council have identified essential fish habitat for federally managed species and federal agencies are required to consult with NMFS when their activities, including permits and licenses they issue, may adversely affect EFH. NMFS must also include measures to minimize the adverse affects of fishing gear and fishing activities on EFH.

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Background

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) set forth a mandate for NMFS, regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The EFH provisions of the Magnuson-Stevens Act support one of the nation's overall marine resource management goals - maintaining sustainable fisheries. Maintaining suitable marine fishery habitat quality and quantity is critical to achieve this goal.

WHAT IS ESSENTIAL FISH HABITAT (EFH)?

The Magnuson-Stevens Act, defines essential fish habitat as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity."

Habitat Conservation Division

The Southeast Region's Habitat Conservation Division (HCD) implements the NMFS EFH program in the coastal states from North Carolina south through Texas as well as the territories of Puerto Rico and the U.S. Virgin Islands. One of the principal authorities for protecting and conserving marine fishery habitats is the EFH provisions of the Magnuson-Stevens Act, which requires federal agencies that authorize, fund, or undertake projects that may adversely affect EFH to consult with NMFS. Through consultation, the HCD provides recommendations to federal agencies to avoid, minimize, mitigate, or otherwise offset the effects of their actions on EFH.

The review, advisory, and consultative services provided by the HCD to effect conservation and enhancement of fishery habitats use existing laws in addition to the Magnuson-Stevens Act, including the Fish and Wildlife Coordination Act, Clean Water Act, the National Environmental Policy Act, Federal Power Act, and the Coral Reef Conservation Act.

The HCD has offices located in San Juan, Puerto Rico, and Christiansted, St. Croix and area of responsibility coincides with the Caribbean Fishery Management Council's.

Caribbean Fishery Management Council (Caribbean Council)

The Magnuson-Steven's Act created regional fishery management councils to advise NMFS on fishery management issues. Three regional fishery management councils exist within the area encompassed by the NMFS Southeast Region: Gulf of Mexico; South Atlantic; and Caribbean. The Caribbean Council first described EFH in a 1998 fishery management plan (FMP) amendment. The most recent revisions and updates became effective in 2005 and were reviewed in 2012 and again in 2019. Fishery management actions developed by fishery management councils, and approved by NMFS, are required to minimize adverse affects of fishing activities on EFH to the maximum extent practicable.

NMFS Highly Migratory Species Division

NMFS is responsible for identifying and describing EFH in fishery management plans for highly migratory species (HMS) such as sharks, tunas, and billfish which cross fishery management council boundaries. EFH for HMS in the Caribbean was updated in 2017 in an FMP amendment by NMFS HMS.

EFH Designations for Current Caribbean Council Fishery Management Plans

Reef Fish EFH – EFH for the Reef Fish Fishery in the U.S. Caribbean consists of all waters from mean high water to the outer boundary of the EEZ (habitats used by eggs and larvae) and all substrates from mean high water to 100 fathoms depth (habitats used by other life stages).

Queen Conch EFH – EFH for the queen conch fishery in the U.S. Caribbean consists of all waters from mean high water to the outer boundary of the EEZ (habitats used by eggs and larvae) and seagrass, benthic algae, coral, live/hard bottom and sand/shell substrates from mean high water to 100 fathoms depth (habitats used by other life stages).

Spiny Lobster EFH – EFH for the spiny lobster fishery in the U.S. Caribbean consists of all waters from mean high water to the outer boundary of the EEZ (habitats used by phyllosome larvae) and seagrass, benthic algae, mangrove, coral, and live/hard bottom substrates from mean high water to 100 fathoms depth (habitats used by other life stages).

Coral EFH – EFH for the Coral Fishery in the U.S. Caribbean consists of all waters from mean low water to the outer boundary of the EEZ (habitats used by larvae) and coral and hard bottom substrates from mean low water to 100 fathoms depth (habitat used by other life stages).

EFH Designations for Highly Migratory Species Fishery Management Plan

NMFS HMS identified geographic areas, rather than specific habitat types, as EFH. Maps of HMS EFH are located in Amendment 10 of the Consolidated HMS FMP (NMFS, 2017) as well as the online EFH Mapper Tool:

http://www.habitat.noaa.gov/protection/efh/habitatmapper.html

General Habitat Types Identified as EFH by the Caribbean Council in the U.S. Caribbean

Photos: NOAA Photo Library

⟵Salt Marshes

⟵ Seagrass

⟵Intertidal Flats

Salt Ponds

Sandy Beaches

Rocky Shores

⟵Estuarine & Marine Water Column

⟵Mangrove Wetlands

⟵Live (Hard)Bottoms

Mud, Sand, Shell, and Rock Substrates

⟵Corals & Coral Reefs

EFH-HAPC: Habitat Areas of Particular Concern in the U.S. Caribbean

The EFH regulations encourage NMFS and fishery management councils to consider a second, more limited habitat designation for each species in addition to EFH. EFH-HAPC are described as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. EFH-HAPCs are not afforded any additional regulatory protection under the Magnuson-Stevens Act; however, federal actions with potential adverse impacts to EFH-HAPCs will be more carefully scrutinized during the EFH consultation process. These areas may be subject to more stringent EFH conservation recommendations.

NMFS HMS has not designated any EFH-HAPCs in the U.S. Caribbean. The following areas have been designated by the Caribbean Council as EFH-HAPC:

Coral - Ecologically Important Habitats

Puerto Rico

- Luis Peña Channel, Culebra
- Mona/Monito
- La Parguera, Lajas
- Caja de Muertos, Ponce
- Tourmaline Reef
- Guánica State Forest
- Punta Petrona, Santa Isabel
- Ceiba State Forest
- La Cordillera, Fajardo
- Guayama Reefs
- Steps and Tres Palmas, Rincon
- Los Corchos Reef, Culebra
- Desecheo Reefs, Desecheo

St. Croix

- St. Croix Coral Reef Area of Particular Concern, including the East End Marine Park
- Buck Island Reef National Monument
- South Shore Industrial Area Patch Reef and Deep Reef System
- Frederiksted Reef System
- Cane Bay
- Green Cay Wildlife Refuge

Reef Fish - Spawning Habitats

Puerto Rico

- Tourmaline Bank/Buoy 8
- Abrir La Sierra Bank/Buoy 6
- Bajo de Sico
- Vieques, El Seco

St. Croix

- Mutton snapper spawning aggregation area
- East of St. Croix (Lang Bank)

St. Thomas

- Hind Bank Marine Conservation District
- Grammanik Bank

Reef Fish - Ecologically Important Habitats

Puerto Rico

- Hacienda la Esperanza, Manití
- Bajuras and Tiberones, Isabela
- Cabezas de San Juan, Fajardo
- JOBANNERR, Jobos Bay
- Bioluminescent Bays, Vieques
- Boquerón State Forest
- Pantano Cibuco, Vega Baja
- Piñones State Forest
- Río Espiritu Santo, Río Grande
- Seagrass beds of Culebra Island (nine sites designated as Resource Category 1 and two additional sites)
- Northwest Vieques seagrass west of Mosquito Pier, Vieques

St. Thomas

- Southeastern St. Thomas, including Cas Key and the mangrove lagoon in Great St. James Bay
- Saba Island/Perseverance Bay, including Flat Key and Black Point Reef

St. Croix

- Salt River Bay National Historical Park and Ecological Preserve and Marine Reserve and Wildlife Sanctuary
- Altona Lagoon
- Great Pond South Shore Industrial Area
- Sandy Point National Wildlife Refuge

Summarized Caribbean Council EFH Designation Process

The NMFS Southeast Region and the Caribbean Council have identified EFH to include estuarine and marine habitats which support federally managed species. The Caribbean Council and NMFS analyzed alternatives for EFH based on individual species and life stages condensed to a single EFH designation for each of the FMPs for the U.S. Caribbean. Initial EFH identifications and descriptions were completed by the Caribbean Council in 1998 (CFMC, 1998). In 2004, the Caribbean Council and NMFS completed an environmental impact statement (EIS) providing new, more thorough NEPA analysis (CFMC, 2004) and in 2005 a comprehensive amendment to the FMPs of the U.S. Caribbean was approved (CFMC, 2005).

The effort to identify and delineate EFH undertaken by the Caribbean Council was a rigorous process and involved advice and input by numerous state, territorial, and federal agencies and the public at large. Known density and distribution information was combined with life-history information derived from an analysis of functional relationships between fish and their habitats. The following life stages were used for each managed species: eggs, larvae, post-larvae, early juveniles, late juveniles, adults, and spawning adults. Life stage distribution and density information was applied to each species life stage.

Information to distinguish between the total distribution of a species' life stages and subsets of the species distribution did not exist with sufficient precision to indicate that one species' life stage distribution should be identified as EFH and another should not. Due to the paucity of this type of information in the U.S. Caribbean, the distribution of species and species' life stages in the U.S. Caribbean was assumed to be the distribution of all habitats that the species, or life stage, was known to associate with. All habitat used by a species/life stage was considered of equal value. Additionally, no information was available from other sources to distinguish habitat utilization in one region of the U.S. Caribbean from another. Therefore, the EFH designations in the U.S. Caribbean appear to be very expansive, encompassing most of the coastal waters and Exclusive Economic Zone; however, it is important to realize EFH is designated by life stage for each managed species.

The Caribbean Council designated EFH-HAPCs in the Reef Fish FMP as areas based on the occurrence of confirmed spawning locations and natural reserves or sites based on expert opinion. HAPCs in the Coral FMP are also natural reserves or sites based on expert opinion.

Summarized Highly Migratory Species EFH Designation Process

In 2017, HMS EFH identifications and descriptions were updated based on a method which creates a probability boundary using all available distribution points for a particular species and life stage, including in the U.S. Caribbean. The method takes into account the distance between each point and the next nearest point and excludes outliers where the species occurred in relatively low numbers. Lower probability boundaries were also analyzed but the 95 percent boundary represents the most precautionary approach and most closely corresponds to the 1999 EFH boundaries. Specific EFH boundaries were edited due to buffers which overlapped shorelines or extended beyond the exclusive economic zone. A detailed description of the GIS and Hawth's Analysis Tools used to create the HMS EFH boundaries is provided in Chapter 4 of the Consolidated HMS FMP (NMFS 2009).

Because the primary data type used was species specific distribution data, NMFS HMS identified geographic areas, rather than specific habitat types, as EFH. Maps of HMS EFH are located in Chapter 5 of the Consolidated HMS FMP (NMFS, 2009) as well as the online EFH Mapper Tool.

NMFS HMS has not designated any EFH-HAPC's in the U.S. Caribbean.

EFH CONSULTATION PROCESS (See Flow Diagram on Page 8)

In the regulatory context, one of the most important provisions of the Magnuson-Stevens Act for conserving fish habitat is the consultation required by federal agencies involved in permitting, funding, or undertaking actions which may adversely impact EFH. The EFH Final Rules defines "adverse effect" to mean any impact that reduces quality and/or quantity of EFH. EFH consultation may be required for activities occurring outside of EFH when adverse effects to EFH may occur as a result of that activity. The Magnuson-Stevens Act does not require state or local agencies to consult. However, NMFS is directed to comment and provide EFH conservation recommendations if we become aware of non-federal activities which may have an adverse affect on EFH.

At its most basic, an EFH consultation consists of a federal agency providing NMFS with an EFH assessment, NMFS responding with EFH conservation recommendations followed by the federal agency's written response to the recommendations.

EFH Assessment: An EFH consultation generally begins when NMFS receives the federal action agency's EFH assessment. An EFH assessment is a critical review of the proposed project and its potential impacts to EFH. As outlined in the regulation, EFH assessments must include:

(1) a description of the action;

(2) an analysis of the potential adverse effects of the action on EFH and the managed species;

(3) the federal agency's conclusions regarding the effects of the action on EFH; and,

(4) proposed mitigation, if applicable.

If appropriate, the assessment should also include the results of an on-site inspection, the views of recognized experts on the habitat or species affects, a literature review, an analysis of alternatives to the proposed action, and any other relevant information.

TYPES OF EFH CONSULTATION

Project Specific Consultations: The vast majority of EFH consultations are project specific consultations incorporated into existing environmental review procedures because consultation and coordination is already required by other statutes. To incorporate EFH consultations three criteria must be met:

(1) the existing process must provide NMFS with timely notification of the action;

(2) notification of the action must include an EFH assessment of the impacts of the proposed action as outlined in the EFH rules; and

(3) NMFS must have completed a written finding indicating the existing coordination process satisfies the requirements of the Magnuson-Stevens Act.

To facilitate project-specific consultations, NMFS and the action agency should discuss how existing review or coordination processes can be used to accomplish the EFH consultation. The NMFS will then provide a letter to the action agency describing the process of EFH consultation within the existing project review framework.

Abbreviated and Expanded Consultations: When an agreement to use an existing procedure is not in place, project specific consultations must follow procedures in the EFH Final Rule. Abbreviated consultations allow NMFS to quickly determine to what degree a federal action may adversely impact EFH and should be used when impacts to EFH are expected to be minor. For example, the abbreviated consultation procedure

would be used when the adverse effect of an action or proposed action could be alleviated through minor design or operational modifications, or the inclusion of measures to offset unavoidable adverse impacts.

Expanded consultations maximize NMFS and a federal action agency opportunity to work together in the review of an activity's impact on EFH and the development of EFH conservation recommendations. Expanded consultation procedures must be used for federal actions which would result in substantial adverse effects to EFH. Federal action agencies are encouraged to contact NMFS at the earliest opportunity to discuss whether the adverse effect of a proposed action makes expanded consultation appropriate. In addition, it may be determined after review of an abbreviated consultation, a greater level of review and analysis would be appropriate. Expanded consultation procedures provide additional time for the development of EFH conservation recommendations, and may be appropriate for actions such as the construction of large marinas and port facilities, or activities subject to preparation of an environmental impact statement.

Programmatic Consultation: Evaluation at a programmatic level may be appropriate when sufficient information is available to develop EFH conservation recommendations and address all reasonably foreseeable adverse impacts under a particular program area. For example, the NMFS Southeast Region has a programmatic consultation in place with the Department of Interior for the siting and removal of oil and gas structures on the outer continental shelf of the Gulf of Mexico.

General Concurrences: The EFH Final Rule allows a General Concurrence to be utilized for categories of similar activities having minimal individual and cumulative impacts such as activities authorized under the U.S. Army Corps of Engineers' Nationwide Permit program. Consultation occurs at the Corps' District level authorizing a variety of activities with minimal impacts.

Programmatic and General Concurrence consultations minimize the need for individual project consultation in most cases because NMFS has determined the actions will likely result in no more than minimal adverse affects, and conservation measures would be implemented.

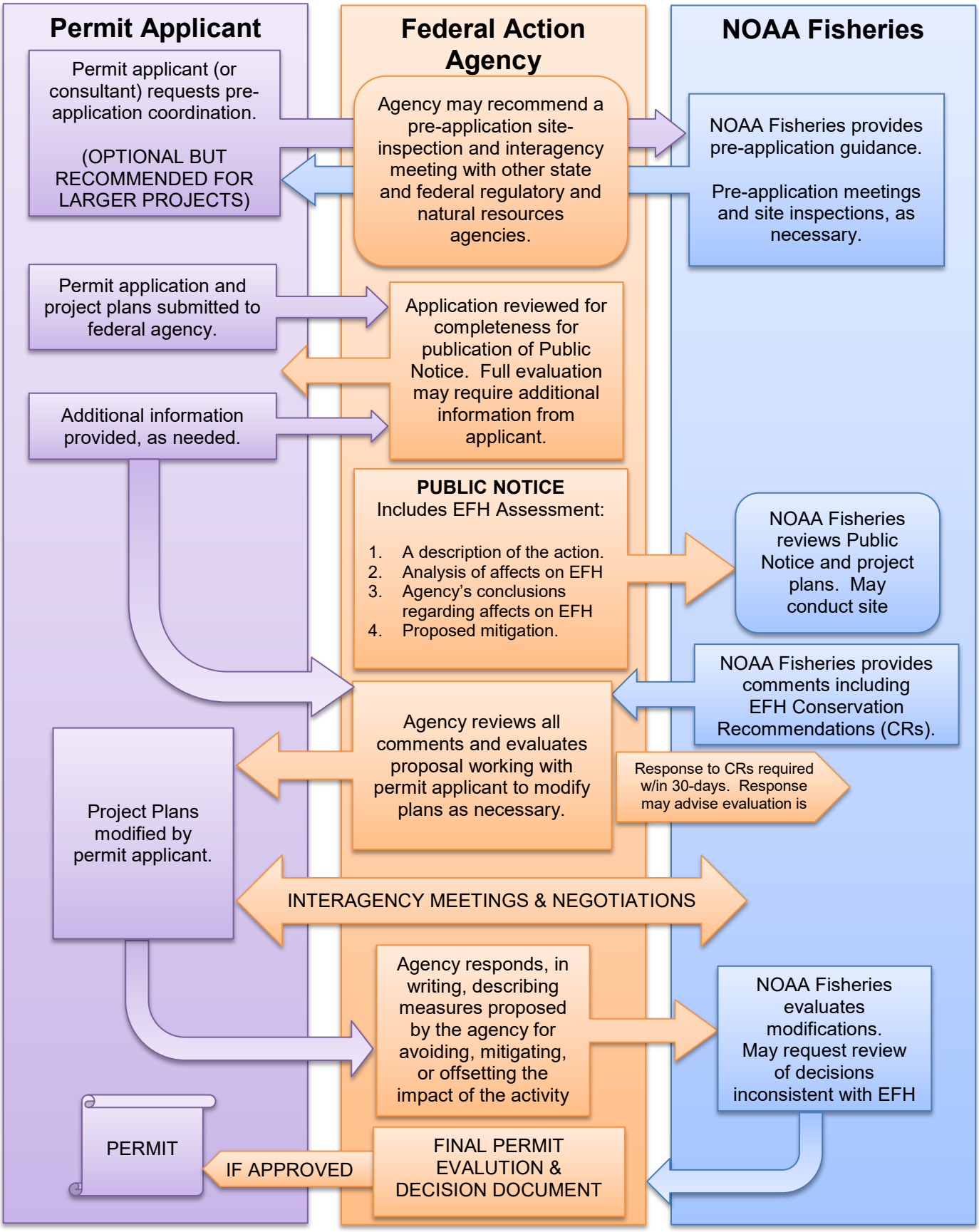
Designating a non-Federal Representatives: Federal agencies may designate a non-federal representative (e.g., a consultant) to conduct an EFH consultation. However, the federal action agency remains responsible for compliance with the consultation requirements of the Magnuson-Stevens Act.

Federal Agency Response to EFH Conservation Recommendations

Regardless of what consultation method is used, the Magnuson-Stevens Act requires federal agencies to respond in writing to NMFS and the fishery management council within 30 days of receiving EFH conservation recommendations. The EFH Final Rule requires the response to include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the anticipated EFH impacts. In cases where a response is inconsistent with the EFH conservation recommendations, the agency must provide its response 10 days prior to taking final action. This response must explain reasons for not following NMFS recommendations, including the scientific rationale for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to offset the adverse affects.

Responses Inconsistent with NMFS EFH Conservation Recommendations

The consultation process provides an important opportunity to resolve critical and outstanding EFH issues prior to an action agency rendering a final decision. When an agency decision is inconsistent with NMFS EFH conservation recommendations, the NMFS Assistant Administrator may request a meeting with the head of the federal action agency to further discuss the project and attempt to achieve a greater level of protection for EFH and federally managed fisheries. The process for higher-level review of proposed actions is not specified in the regulations; rather, it is to be addressed on an agency-by-agency basis.


Permit Applicant
Federal Action Agency
NOAA Fisheries
Permit applicant (or consultant) requests pre-application coordination.
(OPTIONAL BUT RECOMMENDED FOR LARGER PROJECTS)
Agency may recommend a pre-application site-inspection and interagency meeting with other state and federal regulatory and natural resources agencies.
NOAA Fisheries provides pre-application guidance.
Pre-application meetings and site inspections, as necessary.
Permit application and project plans submitted to federal agency.
Application reviewed for completeness for publication of Public Notice. Full evaluation may require additional information from applicant.
Additional information provided, as needed.
PUBLIC NOTICE
Includes EFH Assessment:
1. A description of the action.
2. Analysis of affects on EFH
3. Agency's conclusions regarding affects on EFH
4. Proposed mitigation.
NOAA Fisheries reviews Public Notice and project plans. May conduct site
NOAA Fisheries provides comments including EFH Conservation Recommendations (CRs).
Agency reviews all comments and evaluates proposal working with permit applicant to modify plans as necessary.
Response to CRs required w/in 30-days. Response may advise evaluation is
Project Plans modified by permit applicant.
INTERAGENCY MEETINGS & NEGOTIATIONS
Agency responds, in writing, describing measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity
NOAA Fisheries evaluates modifications. May request review of decisions inconsistent with EFH
PERMIT
IF APPROVED
FINAL PERMIT EVALUTION & DECISION DOCUMENT

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REGULATORY BACKGROUND

Magnuson-Stevens Fishery Conservation and Management Act & EFH Final Rule

The Magnuson-Stevens Act requires EFH be designated for each fishery as a whole. The EFH regulations clarify every FMP must describe and identify EFH for all life stages of each managed species. The Magnuson-Stevens Act also directs NMFS and the fishery management councils to identify actions to encourage the conservation and enhancement of EFH and identify measures to minimize to the extent practicable the adverse effects of fishing on EFH.

On January 17, 2002, regulations (EFH Final Rule) which specify procedures for implementation of the EFH provisions of the Magnuson-Stevens Act, were published in the *Federal Register*. These rules, in two subparts, address requirements for FMP amendment and detail the coordination, consultation, and recommendation requirements of the Magnuson-Stevens Act. (50 C.F.R. Part 600)

Selected Text from the Magnuson-Stevens Act (16 U.S.C. 1855 *et seq*)

SEC. 305. OTHER REQUIREMENTS AND AUTHORITY
104-297
(b) FISH HABITAT.

(1) (A) The Secretary shall, within 6 months of the date of enactment of the Sustainable Fisheries Act, establish by regulation guidelines to assist the Councils in the description and identification of essential fish habitat in fishery management plans (including adverse impacts on such habitat) and in the consideration of actions to ensure the conservation and enhancement of such habitat. The Secretary shall set forth a schedule for the amendment of fishery management plans to include the identification of essential fish habitat and for the review and updating of such identifications based on new scientific evidence or other relevant information.

(B) The Secretary, in consultation with participants in the fishery, shall provide each Council with recommendations and information regarding each fishery under that Council's authority to assist it in the identification of essential fish habitat, the adverse impacts on that habitat, and the actions that should be considered to ensure the conservation and enhancement of that habitat.

(C) The Secretary shall review programs administered by the Department of Commerce and ensure that any relevant programs further the conservation and enhancement of essential fish habitat.

(D) The Secretary shall coordinate with and provide information to other Federal agencies to further the conservation and enhancement of essential fish habitat.

(2) Each Federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any essential fish habitat identified under this Act.

(3) Each Council--(A) may comment on and make recommendations to the Secretary and any Federal or State agency concerning any activity authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any Federal or State agency that, in the view of the Council, may affect the habitat, including essential fish habitat, of a fishery resource under its authority; and

(B) shall comment on and make recommendations to the Secretary and any Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including essential fish habitat, of an anadromous fishery resource under its authority.

(4) (A) If the Secretary receives information from a Council or Federal or State agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be authorized, funded, or

undertaken, by any State or Federal agency would adversely affect any essential fish habitat identified under this Act, the Secretary shall recommend to such agency measures that can be taken by such agency to conserve such habitat.

(B) Within 30 days after receiving a recommendation under subparagraph (A), a Federal agency shall provide a detailed response in writing to any Council commenting under paragraph (3) and the Secretary regarding the matter. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on such habitat. In the case of a response that is inconsistent with the recommendations of the Secretary, the Federal agency shall explain its reasons for not following the recommendations.

Designating EFH

The EFH regulations (50 C.F.R. Part 600) provide guidance on the implementation of the EFH provisions of the Magunson-Stevens Act. The rule includes information on the types of information used for describing and identifying EFH, designating EFH- HAPC, and mitigating fishing impacts on EFH. The guidelines suggest using information in a risk-averse fashion to ensure adequate protection of habitat for all managed species.

EFH Levels of Information

The regulations suggest fishery management councils analyze available ecological, environmental, and fisheries information and data relevant to the managed species, the habitat requirements by life stage, and the species' distribution and habitat usage to describe and identify EFH using the highest level of detail:

Level 1: Habitat related presence-absence or distribution data

Level 2: Habitat related densities

Level 3: Habitat related growth, reproduction, or survival rates

Level 4: Habitat related production rates.

If there is no information on a given species or life stage, and habitat use cannot be inferred from other means (such as information on a similar species or another life stage) then EFH should not be designated for that species.

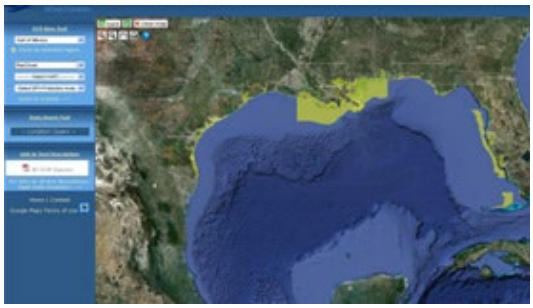
Mapping EFH

The EFH regulations require FMPs to include maps (within the constraints of available information) of the geographic locations or boundaries of EFH. Spatial data quality issues should be considered when evaluating how data can be effectively used in a geographic information system. For example, if the resolution of the shoreline data used to define the boundaries of EFH is too low to conform to the complexity of actual geographic shoreline features, it will not be reliable in near-shore areas. Additionally, geographic and environmental features can change significantly over time, particularly in the marine and coastal environment. Inaccuracies can be insignificant when creating large-scale maps; however, they become more problematic when relying on data to provide accurate information at very specific locations.

EFH Mapper

http://www.habitat.noaa.gov/protection/efh/habitatmapper.html

The EFH Mapper is an online mapping tool providing spatial representations of EFH, EFH-HAPC and EFH areas protected from fishing activities. Users are cautioned to understand the constraints of the information provided by the EFH Mapper.



Caribbean Council Managed Species

REEF FISH FMP

Lutjanidae--Snappers

Unit 1

Black snapper, *Apsilus dentatus*
Blackfin snapper, *Lutjanus buccanella*
Silk snapper, *Lutjanus vivanus*
Vermilion snapper, *Rhomboplites aurorubens*
Wenchman, *Pristipomoides aquilonaris*

Unit 2

Cardinal, *Pristipomoides macrophthalmus*
Queen snapper, *Etelis oculatus*

Unit 3

Gray snapper, *Lutjanus griseus*
Lane snapper, *Lutjanus synagris*
Mutton snapper, *Lutjanus analis*
Dog snapper, *Lutjanus jocu*
Schoolmaster, *Lutjanus apodus*
Mahogany snapper, *Lutjanus mahogani*

Unit 4

Yellowtail snapper, *Ocyurus chrysurus*

Serranidae--Sea basses and Groupers

Unit 1

Nassau Grouper, *Epinephelus striatus*

Unit 2

Goliath grouper, *Epinephelus itajara*

Unit 3

Coney, *Epinephelus fulvus*
Graysby, *Epinephelus cruentatus*
Red hind, *Epinephelus guttatus*
Rock hind, *Epinephelus adscensionis*

Unit 4

Black grouper, *Mycteroperca bonaci*
Red grouper, *Epinephelus morio*
Tiger grouper, *Mycteroperca tigris*
Yellowfin grouper, *Mycteroperca venenosa*

Unit 5

Misty grouper, *Epinephelus mystacinus*
Yellowedge grouper, *Epinephelus flavolimbatus*

REEF FISH FMP (Continued)

Haemulidae--Grunts

White grunt, *Haemulon plumieri*
Margate, *Haemulon album*
Tomtate, *Haemulon aurolineatum*
Bluestriped grunt, *Haemulon sciurus*
French grunt, *Haemulon flavolineatum*
Porkfish, *Anisotremus virginicus*

Mullidae--Goatfishes

Spotted goatfish, *Pseudupeneus maculatus*
Yellow goatfish, *Mulloidichthys martinicus*

Sparidae--Porgies

Jolthead porgy, *Calamus bajonado*
Sea bream, *Archosargus rhomboidalis*
Sheepshead porgy, *Calamus penna*
Pluma, *Calamus pennatula*

Holocentridae--Squirrelfishes

Blackbar soldierfish, *Myripristis jacobus*
Bigeye, *Priacanthus arenatus*
Longspine squirrelfish, *Holocentrus rufus*
Squirrelfish, *Holocentrus adscensionis*

Malacanthidae--Tilefishes

Blackline tilefish, *Caulolatilus cyanops*
Sand tilefish, *Malacanthus plumieri*

Carangidae--Jacks

Blue runner, *Caranx crysos*
Horse-eye jack, *Caranx latus*
Black jack, *Caranx lugubris*
Almaco jack, *Seriola rivoliana*
Bar jack, *Caranx ruber*
Greater amberjack, *Seriola dumerili*
Yellow jack, *Caranx bartholomaei*

Scaridae--Parrotfishes

Blue parrotfish, *Scarus coeruleus*
Midnight parrotfish, *Scarus coelestinus*
Princess parrotfish, *Scarus taeniopterus*
Queen parrotfish, *Scarus vetula*
Rainbow parrotfish, *Scarus guacamaia*
Redfin parrotfish, *Sparisoma rubripinne*
Redtail parrotfish, *Sparisoma chrysopterum*
Stoplight parrotfish, *Sparisoma viride*
Redband parrotfish, *Sparisoma aurofrenatum*
Striped parrotfish, *Scarus croicensis*

Caribbean Council Managed Species (Continued)

REEF FISH FMP (Continuted)

Acanthuridae--Surgeonfishes

Blue tang, *Acanthurus coeruleus*
Ocean surgeonfish, *Acanthurus bahianus*
Doctorfish, *Acanthurus chirurgus*

Balistidae–-Triggerfishes

Ocean triggerfish, *Canthidermis sufflamen*
Queen triggerfish, *Balistes vetula*
Sargassum triggerfish, *Xanthichthys ringens*

Monacanthidae-–Filefishes

Scrawled filefish, *Aluterus scriptus*
Whitespotted filefish, *Cantherhines macrocerus*
Black durgon, *Melichthys niger*

Ostraciidae--Boxfishes

Honeycomb cowfish, *Lactophrys polygonia*
Scrawled cowfish, *Lactophrys quadricornis*
Trunkfish, *Lactophrys trigonus*
Spotted trunkfish, *Lactophrys bicaudalis*
Smooth trunkfish, *Lactophrys triqueter*

Labridae--Wrasses

Hogfish, *Lachnolaimus maximus*
Puddingwife, *Halichoeres radiatus*
Spanish hogfish, *Bodianus rufus*

Pomacanthidae--Angelfishes

Queen angelfish, *Holacanthus ciliaris*
Gray angelfish, *Pomacanthus arcuatus*
French angelfish, *Pomacanthus paru*

SPINY LOBSTER FISHERY MANAGEMENT PLAN

spiny lobster - *Panulirus argus*

QUEEN CONCH FISHERY MANAGEMENT PLAN

queen conch - *Strombus gigas*

CORAL FISHERY MANAGEMENT PLAN

Corals and coral reef communities are comprised of several hundred species

Highly Migratory Species

TUNAS

Atlantic albacore tuna ..... *Thunnus alalunga*
Atlantic bigeye tuna ..... *Thunnus obesus*
Atlantic bluefin tuna ..... *Thunnus thynnus*
Atlantic skipjack tuna .....*Katsuwonus pelamis*
Atlantic yellowfin tuna ..... *Thunnus albacres*

BILLFISH

swordfish ..... *Xiphias gladius*
blue marlin..... *Makaira nigricans*
white marlin ..... *Tetrapturus albidus*
sailfish .....*Istiophorus platypterus*
longbill spearfish.....*Tetrapturus pfluegeri*

SHARKS – Large Coastal

basking shark ..... *Cetorhinus maximus*
great hammerhead ..... *Sphyrna mokarran*
scalloped hammerhead ..... *Sphyrna lewini*
smooth hammerhead.....*Sphyrna zygaena*
white shark ..... *Carcharodon carcharias*
nurse Shark ..... *Ginglymostoma cirratum*
bignose shark ..... *Carcharhinus altimus*
blacktip shark ..... *Carcharhinus limbatus*
bull shark ..... *Carcharhinus leucas*
Caribbean reef shark .....*Carcharhinus perezi*
dusky shark ..... *Carcharhinus obscurus*
Galapagos shark .... *Carcharhinus galapagensis*
lemon shark.....*Negaprion brevirostris*
narrowtooth shark.....*Carcharhinus brachyurus*
night shark..... *Carcharhinus signatus*
sandbar shark..... *Carcharhinus plumbeus*
silky shark..... *Carcharhinus falciformis*
spinner Shark ..... *Carcharhinus brevipinna*
tiger shark..... *Galeocerdo cuvier*
bigeye sand tiger .....*Odontaspis noronhai*
sand tiger shark..... *Carcharias taurus*
whale shark .....*Rhincodon typus*

SHARKS – Small Coastal

Atlantic angel shark.....*Squatina dumeril*
bonnethead shark ..... *Sphyrna tiburo*
Atlantic sharpnose shark .. *Rhizoprionodon terraenovae*
blacknose shark .....*Carcharhinus acronotus*
Caribbean sharpnose shark ....*Rhizoprionodon porosus*
finetooth shark .....*Carcharhinus isodon*
smalltail shark ..... *Carcharhinus porosus*

SHARKS - Pelagic

bigeye sixgill shark .....*Hexanchus nakamurai*
sevengill shark ..... *Heptranchias perlo*
sixgill shark .....*Hexanchus griseus*
longfin mako shark .....*Isurus paucus*
porbeagle shark .....*Lamna nasus*
shortfin mako shark.....*Isurus oxyrinchus*
blue shark .....*Prionace glauca*
oceanic whitetip shark..... *Carcharhinus longimanus*
bigeye thresher shark..... *Alopias superciliosus*
thresher shark .....*Alopias vulpinus*

References:

16 U.S.C. §1853(a)(7) – Contents of Fishery Management Plans

50 Code of Federal Regulations Part 600 – Magnuson-Stevens Act Provisions
SUBPART J — Essential Fish Habitat (EFH) (§§ 600.805 - 600.815)
SUBPART K — EFH Coordination, Consultation, and Recommendations (§§ 600.905 - 600.930)

Caribbean Fishery Management Council. 1998. Essential Fish Habitat (EFH) generic amendment to the Fishery Management Plans (FMPs) of the U.S. Caribbean including a draft environmental assessment. Caribbean Fishery Management Council. San Juan, Puerto Rico. 2 vols.

Caribbean Fishery Management Council. 2004. Final Environmental Impact Statement for the Generic Essential Fish Habitat Amendment to the Fishery Management Plans of the U.S. Caribbean. Caribbean Fishery Management Council. San Juan, Puerto Rico.

Caribbean Fishery Management Council. 2005. Amendment to the Fishery Management Plans (FMPs) of the U.S. Caribbean to Address Required Provisions of the Magnuson-Stevens Fishery Conservation and Management Act:

- Amendment 2 to the FMP for the Spiny Lobster Fishery of Puerto Rico and the U.S. Virgin Islands
- Amendment 1 to FMP for the Queen Conch Resources of Puerto Rico and the U.S. Virgin Islands
- Amendment 3 to the FMP for the Reef Fish Fishery of Puerto Rico and the U.S. Virgin Islands
- Amendment 2 to the FMP for the Corals and Reef Associated Invertebrates of Puerto Rico and the U.S. Virgin Islands

Including Supplemental Environmental Impact Statement, Regulatory Impact Review, and Regulatory Flexibility Act Analysis. San Juan, Puerto Rico.

NMFS. 2009. Final Amendment 1 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan, Essential Fish Habitat. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 395.

Useful Websites:

NMFS Southeast Region Habitat Conservation Division:
https://www.fisheries.noaa.gov/southeast/about-us/conserving-habitat-southeast

Caribbean Fishery Management Council:
http://www.caribbeanfmc.com/

NMFS Office of Habitat Conservation:
https://www.fisheries.noaa.gov/topic/habitat-conservation

NMFS Highly Migratory Species:
https://www.fisheries.noaa.gov/topic/atlantic-highly-migratory-species

NOAA Habitat Program

Conserving Habitats for the Future

For more information, please visit us on the internet:
https://www.fisheries.noaa.gov/region/southeast#habitat

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